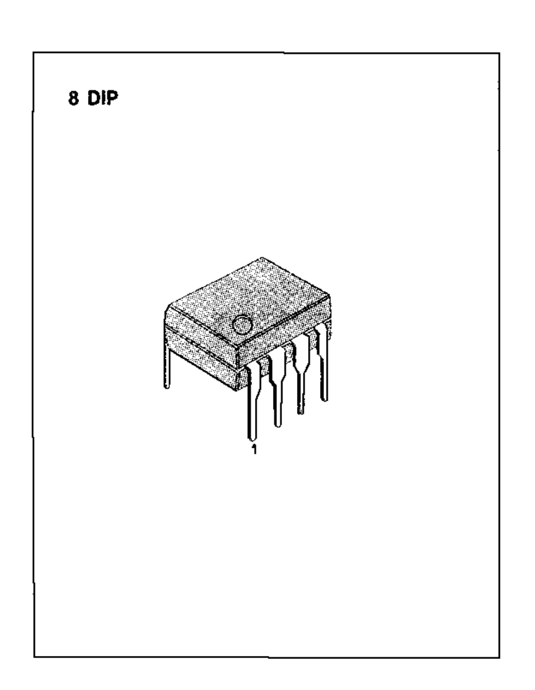
# 1.2W AUDIO POWER AMPLIFIER

The KA2201 is a monolithic integrated audio amplifier. It is designed for audio frequency class B amplifiers.




## FEATURES

- **Wide operating supply voltage: $V_{CC}$ = 3V ~ 14V**
- **Medium output power.**
  **$P_O$ = 1.2W at $V_{CC}$ = 9V, $R_L$ = 8Ω, THD = 10%.**
- **Low quiescent circuit current ($I_{CCQ}$ = 4mA: Typ).**
- **Good ripple rejection.**
- **Minimum number of external parts required.**

## ORDERING INFORMATION

| Device | Package | Operating Temperature |
|---|---|---|
| KA2201 | 8 DIP | −20°C ~ 70°C |

## BLOCK DIAGRAM

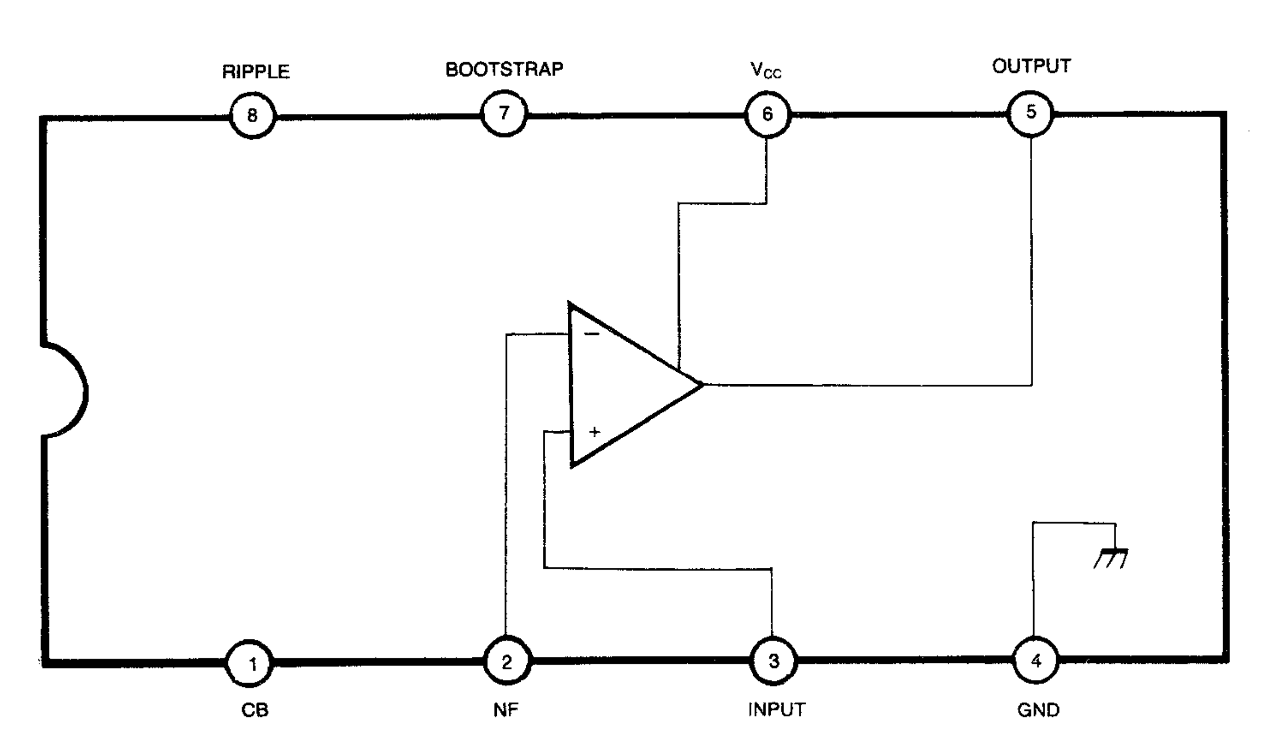



**Fig. 1**

## ABSOLUTE MAXIMUM RATINGS ($T_a$=25°C)

| Characteristic | Symbol | Value | Unit |
|---|---|---|---|
| Supply Voltage | $V_{CC}$ | 16 | V |
| Output Peak Current | $I_{PK}$ | 1.5 | A |
| Power Dissipation | $P_D$ | 1.25 | W |
| Operating Temperature | $T_{OPR}$ | −20 ~ +70 | °C |
| Storage Temperature | $T_{STG}$ | −40 ~ +150 | °C |

## ELECTRICAL CHARACTERISTICS

(Ta = 25°C, $V_{CC}$ = 9V, f = 1KHz, $R_G$ = 600Ω, $R_F$ = 120Ω, $R_L$ = 8Ω, unless otherwise specified)

| Characteristic | Symbol | Test Conditions | Min | Typ | Max | Unit |
|---|---|---|---|---|---|---|
| Quiescent Circuit Current | $I_{CCQ}$ | $V_i$ = 0 | | 4 | 12 | mA |
| Output Power | $P_O$ | $V_{CC}$ = 9V, $R_L$ = 4Ω, THD = 10% | | 1.6 | | W |
| | | $V_{CC}$ = 9V, $R_L$ = 8Ω, THD = 10% | 0.9 | 1.2 | | |
| | | $V_{CC}$ = 6V, $R_L$ = 4Ω, THD = 10% | | 0.75 | | |
| | | $V_{CC}$ = 6V, $R_L$ = 8Ω, THD = 10% | 0.4 | 0.5 | | |
| | | $V_{CC}$ = 12V, $R_L$ = 8Ω, THD = 10% | | 2 | | |
| Total Harmonic Distortion | THD | $P_O$ = 500mW | | 0.3 | 1.0 | % |
| Open Loop Voltage Gain | $G_{VO}$ | $R_F$ = 0 | | 75 | | dB |
| Closed Loop Voltage Gain | $G_{VC}$ | $R_F$ = 120Ω | 33 | 36 | 39 | dB |
| Input Resistance | $R_i$ | | | 5 | | MΩ |
| Output Noise Voltage | $V_{NO}$ | $R_G$ = 10KΩ<br>BW (−3dB) = 50Hz ~ 20KHz | | 0.3 | 1.0 | mV |

## TEST CIRCUIT

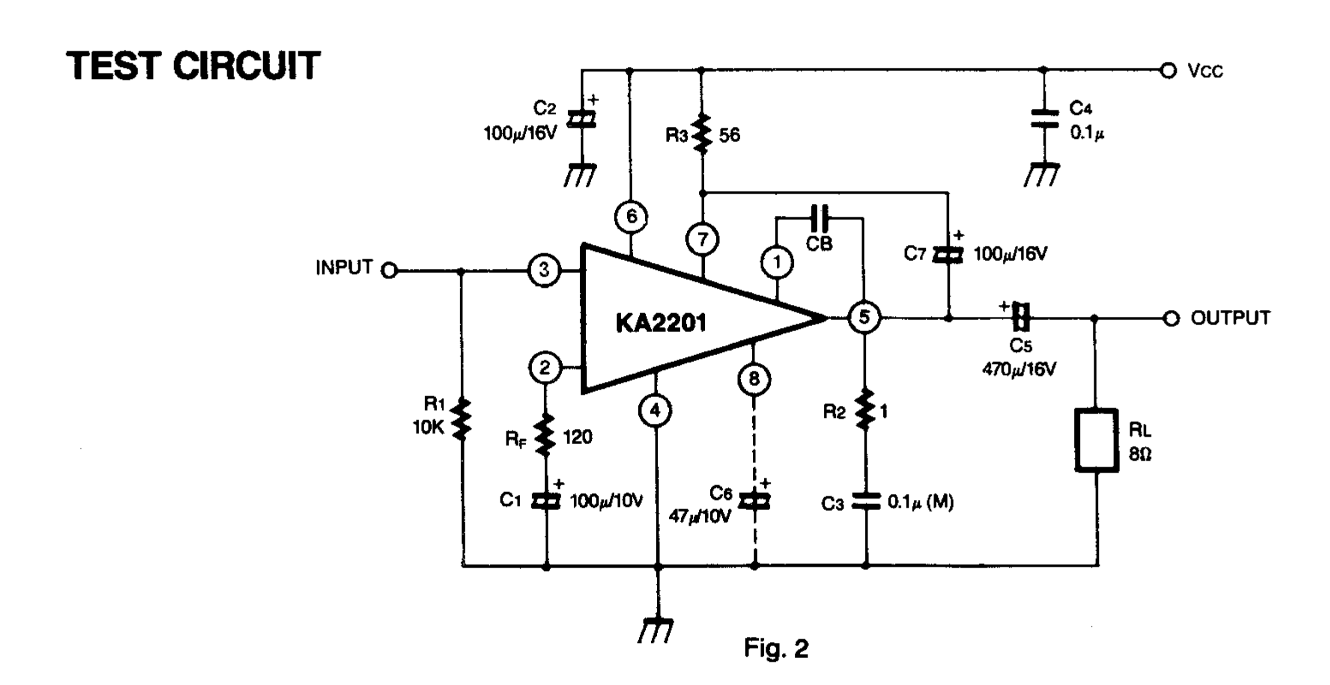
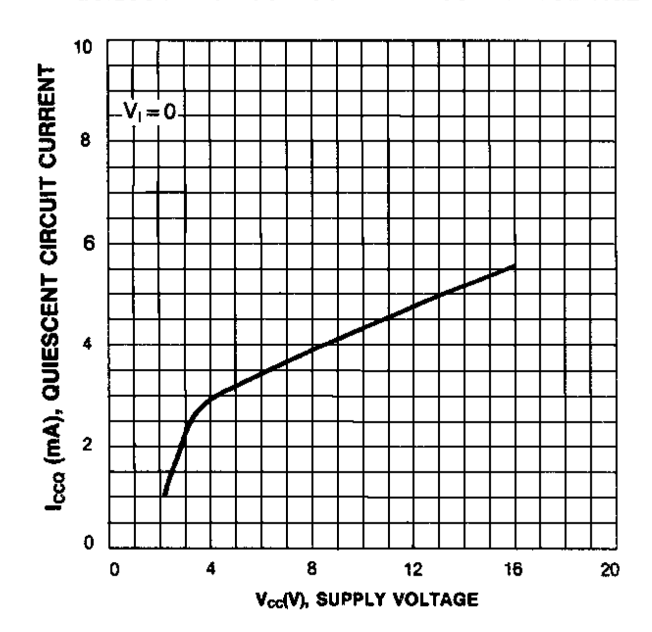
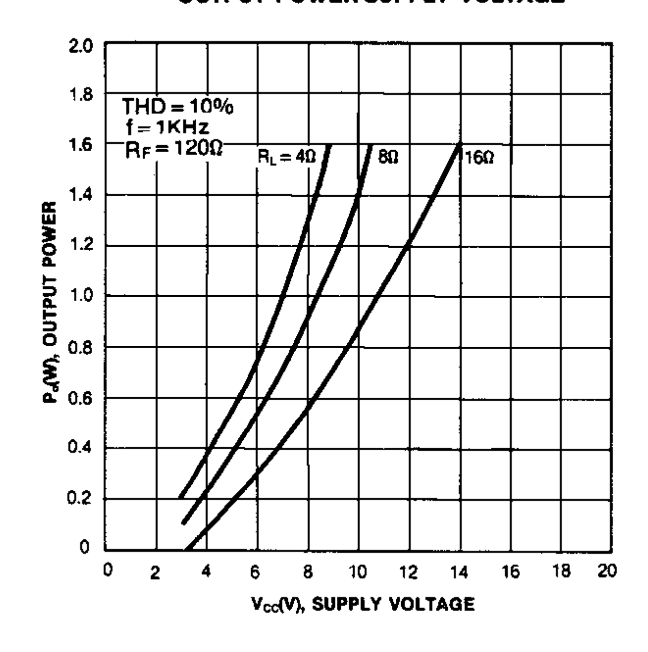



Fig. 2

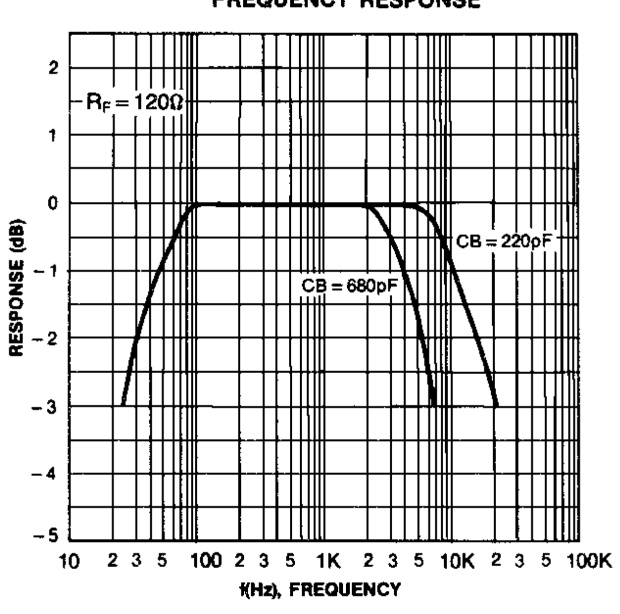
QUIESCENT CIRCUIT CURRENT—SUPPLY VOLTAGE



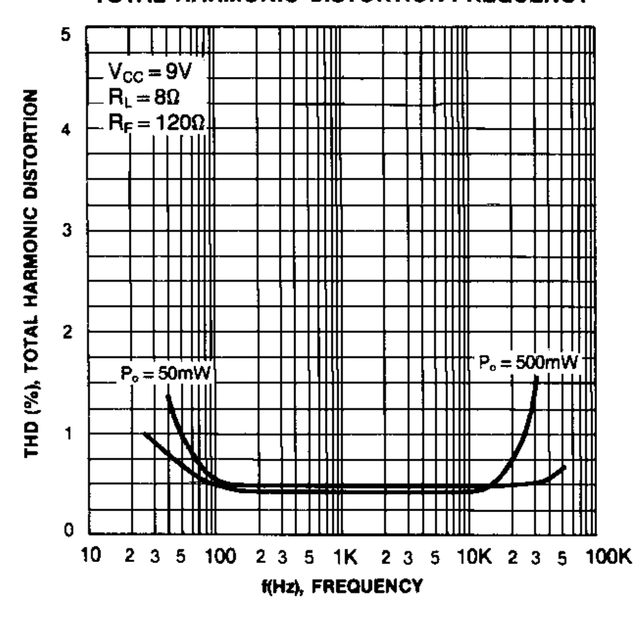

OUTPUT POWER-SUPPLY VOLTAGE



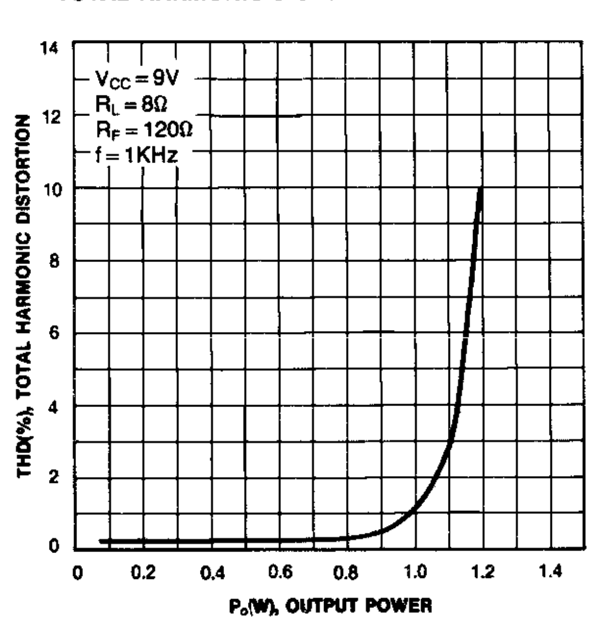

FREQUENCY RESPONSE



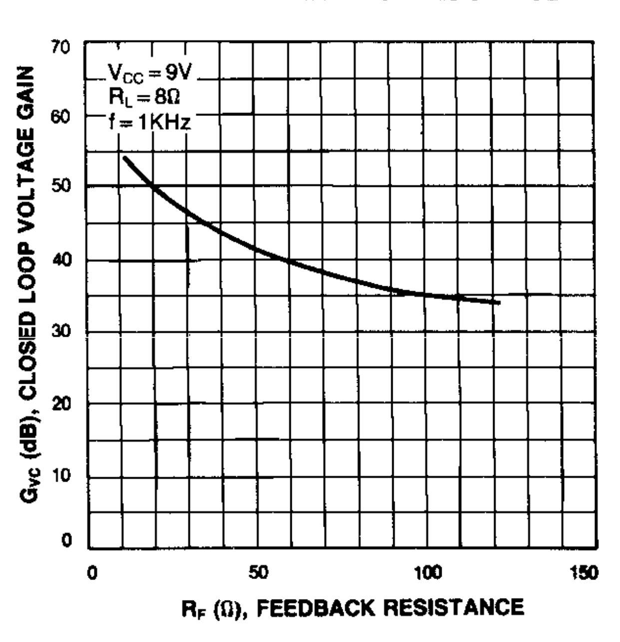

TOTAL HARMONIC DISTORTION-FREQUENCY

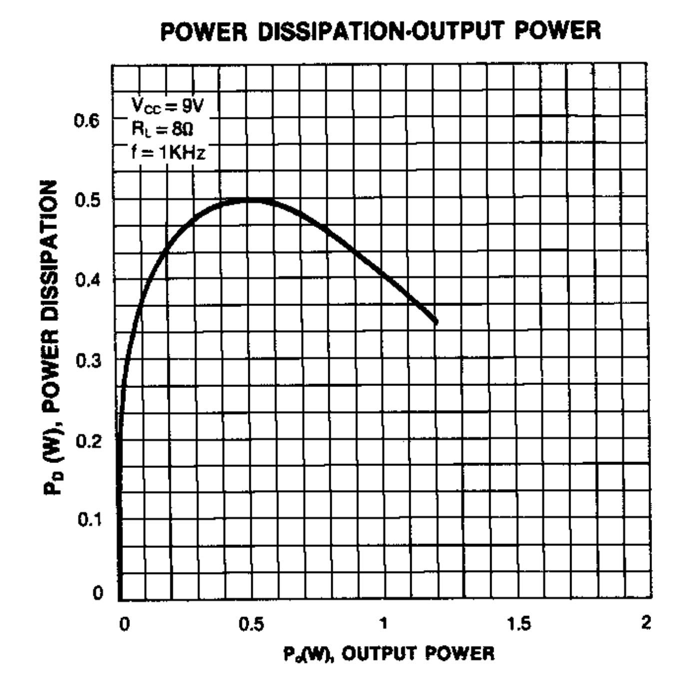


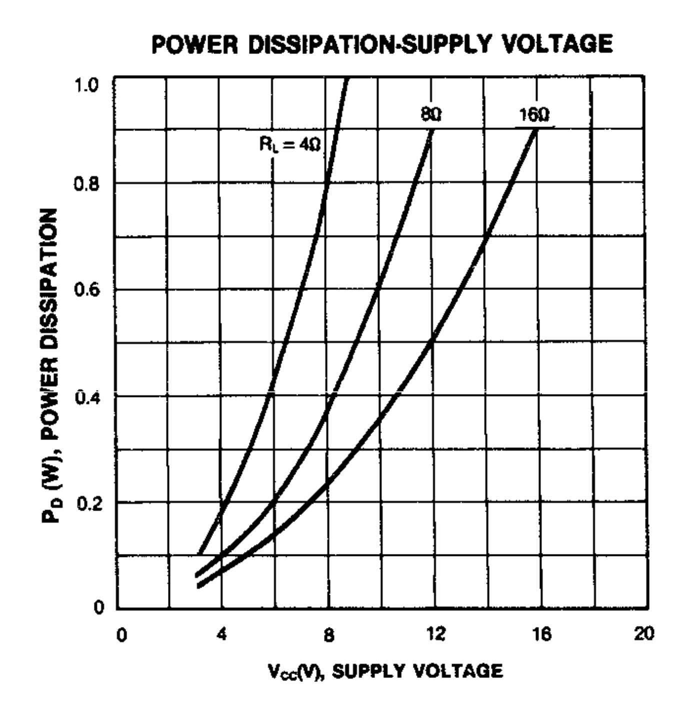

TOTAL HARMONIC DISTORTION-OUTPUT POWER




VOLTAGE GAIN-FEEDBACK RESISTANCE




POWER DISSIPATION-OUTPUT POWER
Vcc = 9V
RL = 8Ω
f = 1KHz
PD (W), POWER DISSIPATION
0.6
0.5
0.4
0.3
0.2
0.1
0
0
0.5
1
1.5
2
Po(W), OUTPUT POWER


POWER DISSIPATION-SUPPLY VOLTAGE
RL = 4Ω
8Ω
16Ω
PD (W), POWER DISSIPATION
1.0
0.8
0.6
0.4
0.2
0
0
4
8
12
16
20
Vcc(V), SUPPLY VOLTAGE